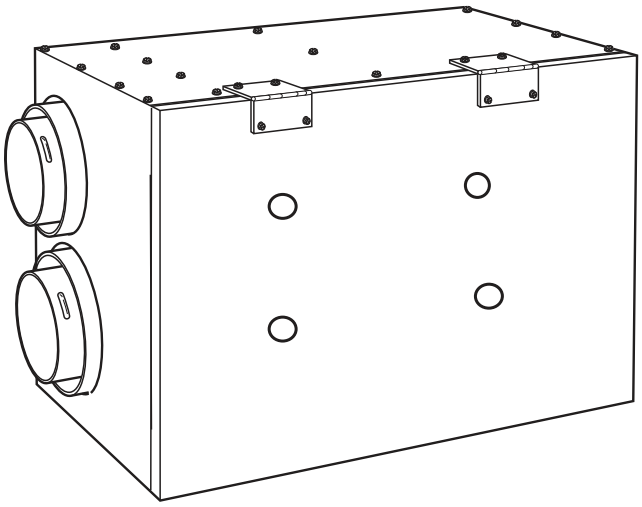
HRVCCLHA
Heat Recovery Ventilator
ERVCCLHA
Energy Recovery Ventilator

Carrier
turn to the experts

Product Data



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The Heat Recovery Ventilation (HRV) and Energy Recovery Ventilator (ERV) systems offered by Carrier are the finest on the market today. These units provide efficient and cost effective heat recovery during the heating season when needed most.

As temperatures drop below 23°F (-5°C), indoor air is recirculated periodically through the heat exchanger core to prevent frost from forming. Competitors' methods of supplementary electric defrost waste energy. Unlike rotary wheel heat exchangers which mix air streams, these cross-flow or counterflow heat exchangers ensure that there is no mixing of the stale air stream with the fresh outdoor air stream.

A filter installed on the incoming outdoor air stream removes large airborne particles from the intake air stream before they enter the heat exchanger and reduces the maintenance required. The units' acoustically engineered design make Carrier ventilators the quietest on the market and ensures that comfort is felt, not heard.

Unlatching two (2) suitcase style latches allows easy removal of the filters and core for cleaning.

NOTE: The HRV should not be installed in an attic or unconditioned space unless provisions are made for drain line freezing and condensation.

STANDARD FEATURES

HRV

- Energy saving defrost cycle
- Cross-flow, counterflow heat exchangers
- One filter on incoming air; one filter on outgoing air to protect core
- Acoustical design
- No-tools maintenance
- Polypropylene heat exchanger core

ERV

- Drainless design
- Integrated airflow balancing points
- Integrated furnace interlock
- High pressure blowers
- Onboard control for continuous high/low ventilator operation
- Energy saving defrost cycle
- Cross-flow, counterflow heat exchangers
- One filter on incoming air; one filter on outgoing air to protect core
- No-tools maintenance
- Enthalpic heat exchanger core

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
E	R	V	C	C	L	H	A	1	1	5	0

Product Type
ERV – Energy Recovery Ventilator
HRV – Heat Recovery Ventilator

Brand
CC – Carrier

Style
LHA – Large Horizontal

Maximum Capacity
150 – 150 CFM
200 – 200 CFM
250 – 250 CFM

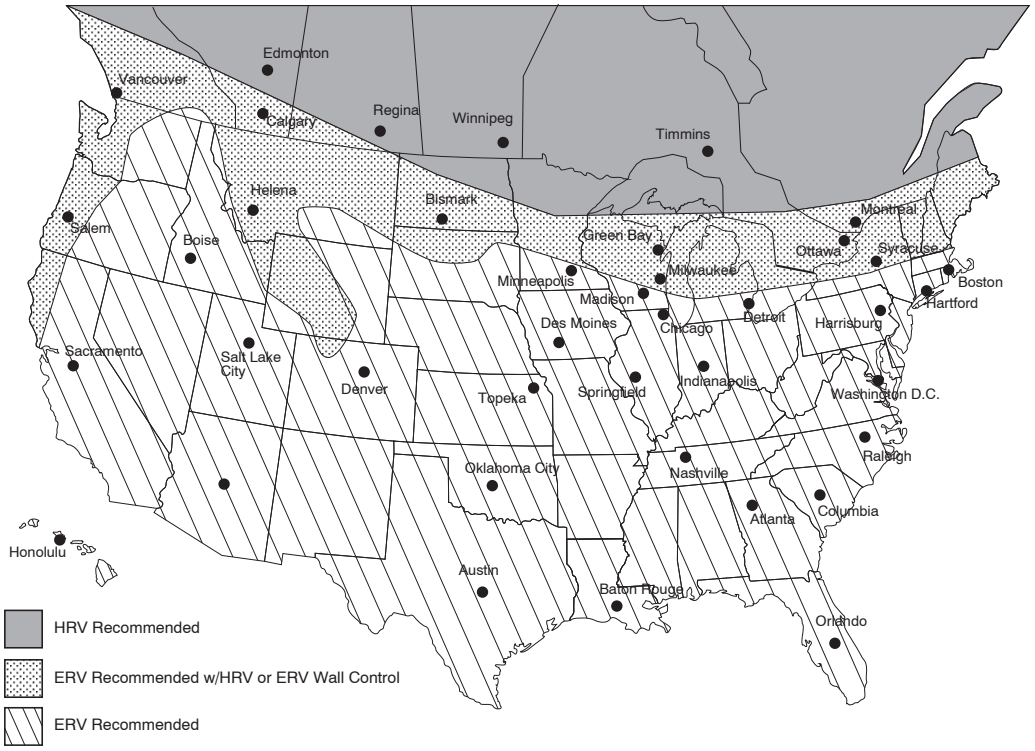
Electrical Supply
1 – 115 Volts

Energy Star (Canada)

- HRVCCLHA1150
- ERVCCLHA1150
- ERVCCLHA1250

These products earned the ENERGY STAR® by meeting strict energy efficiency guidelines set by Natural Resources Canada and the US EPA. They meet ENERGY STAR requirements only when used in Canada.

Climate Map for Energy and Heat Recovery Ventilators



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DIMENSIONS

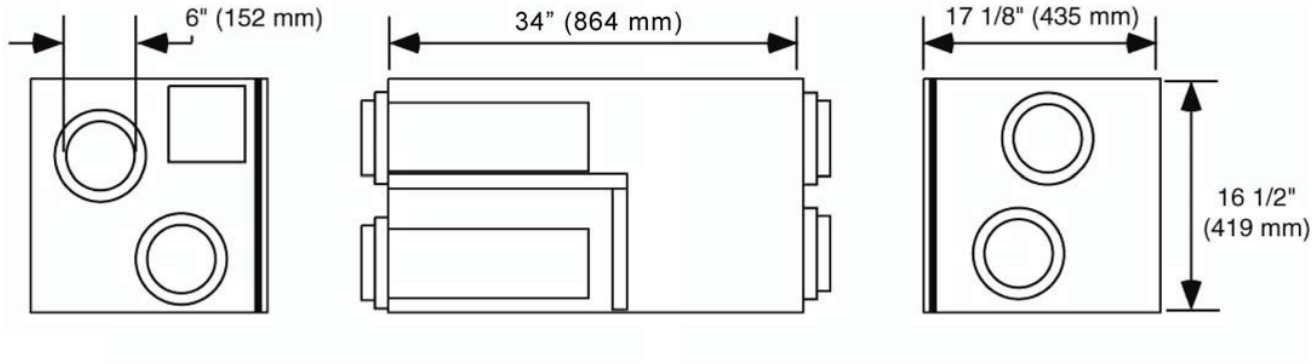

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Fig. 1 - ERVCCLHA1150 / ERVCCLHA1200 Dimensions

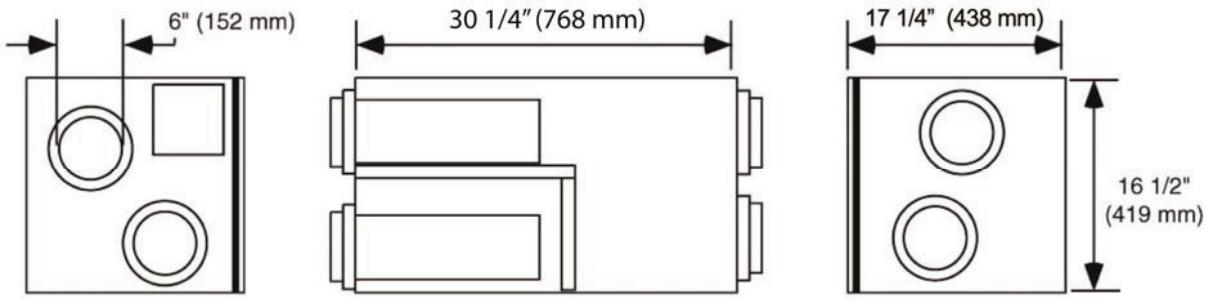

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Fig. 2 - HRVCCLHA1150 / HRVCCLHA1250 Dimensions

PHYSICAL DATA

MODEL	ERVCCLHA1150	ERVCCLHA1200	HRVCCLHA1150	HRVCCLHA1250
Port Locations	Sides	Sides	Side	Side
Core Type	Enthalpic transfer media, Cross Flow	Enthalpic transfer media, Cross Flow	Polypropylene Cross Flow	Polypropylene Cross Flow
Weight — lb (kg)	74 (33.6)	76 (34.5)	65 (29.5)	73 (33.2)
Shipping Weight — lb (kg)	78 (35.4)	80 (36.3)	75 (34)	83 (37.6)
Shipping Dimensions in. (mm)				
Height	19.75 (502)	19.75 (502)	23-1/16	22-15/16
Width	20.5 (521)	20.5 (521)	36-1/16	35-1/16
Length	40.5 (1029)	40.5 (1029)	17-13/16	22-15/16

ELECTRICAL DATA

MODEL	ERVCCLHA1150	ERVCCLHA1200	HRVCCLHA1150	HRVCCLHA1250
Voltage	120	120	120	120
Max Power — watts	150	240	150	218
Max Amps	1.3	2.1	1.4	1.9

PERFORMANCE DATA

HVI Rated Energy Performance

MODEL	MODE	SUPPLY TEMP		NET AIR FLOW		POWER CONSUMED (WATTS)	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVE-NESS	LATENT RECOVERY MOISTURE TRANSFER	TOTAL RECOVERY EFFICIENCY
		°C	°F	L/S	CFM					
ERVCCLHA1150	Heat	0	32	30	64	66	61	75	0.62	
		0	32	46	97	77	60	71	0.58	
		0	32	66	141	137	57	69	0.52	
		–25	–13	22	47	92	49	80	0.56	
	Cool	35	95	31	65	63				56
ERVCCLHA1200	Heat	0	32	39	80	84	60	72	0.60	
		0	32	54	114	113	58	69	0.53	
		0	32	79	167	169	56	66	0.45	
		–25	–13	31	65	116	41	86	0.47	
	Cool	35	95	39	82	81				52
HRVCCLHA1150	Heat	0	32	31	66	85	69	81	0	
		0	32	56	119	124	60	70	0	
		0	32							
		–25	–13	34	72	114	62	80	0.08	
	Cool	35	95							
HRVCCLHA1250	Heat	0	32	31	66	85	69	81	0	
		0	32	56	119	124	60	70	0	
		0	32	86	182	197	53	62	0	
		–25	–13	34	72	114	62	80	0.08	
	Cool	35	95							

Ventilation Performance

MODEL	EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW			
					SUPPLY		EXHAUST	
	PA	IN W.G.	L/S	CFM	L/S	CFM	L/S	CFM
ERVCCLHA1150	25	0.1	84	179	85	181	92	196
	75	0.3	74	156	75	158	85	181
	100	0.4	70	148	71	151	77	163
	150	0.6	58	124	59	125	54	114
	200	0.8	41	87	42	88	20	43
ERVCCLHA1200	25	0.1	105	222	106	225	106	225
	75	0.3	93	198	94	200	100	212
	100	0.4	86	183	88	186	93	198
	150	0.6	70	148	71	150	75	158
	200	0.8	50	107	51	108	29	61
HRVCCLHA1150	25	0.1	83	175	83	176	83	175
	75	0.3	75	159	75	159	75	158
	100	0.4	71	150	71	151	69	146
	150	0.6	59	126	60	127	49	103
	200	0.8	43	91	43	91	21	45
HRVCCLHA1250	25	0.1	110	234	112	237	112	237
	75	0.3	98	208	100	211	99	210
	100	0.4	89	189	91	192	91	193
	150	0.6	71	151	72	153	70	149
	175	0.7	64	136	65	138	44	94

NOTE: For additional data points, refer to HVI Directory at www.hvi.org

CONTROL FEATURES

CONTROL DESCRIPTION	FAN SPEED CONTROL	DEHUMIDISTAT CONTROL	CONTINUOUS MODE	INTERMITTENT MODE
OneTouch	Yes	No	Yes	Yes
Basic	Yes	No	Yes	No
Standard	Yes	Yes	Yes	Yes

Basic Control:

Allows the user to manually set fan speed to low or high as required to maximize comfort.

Standard Control:

Offers automatic dehumidistat control and the option to select continuous or intermittent fan operation. Setting the wall control to low will activate the continuous mode.

OneTouch Control:

Allows control of ventilator with the touch of a button. This control will operate as a main wall control. The OneTouch will operate the unit in Intermittent Mode (20 minutes per hour), continuous low speed, continuous high speed, and off.

AUTOMATIC DEFROST CYCLE FEATURES

All models offer a non-electric defrost cycle feature which prevents frost and ice buildup within the heat recovery core. When the outside air temperature falls below 23°F (-5°C) it is electronically sensed and the dampers close the outside air ports. This allows warm indoor air to recirculate within the heat recovery core. The frequency of this cycle increases as the outside air temperature decreases.

MODEL	25°F TO 55°F (–5°C TO –15°C)		4°F TO –17°F (–15.6°C TO –27.3°C)		BELOW –18°F (–27.8°C)	
	DEFROST*	EXCHANGE†	DEFROST*	EXCHANGE†	DEFROST*	EXCHANGE†
ERVCCLHA	6 Minutes	60 Minutes	6 Minutes	32 Minutes	6 Minutes	20 Minutes
HRVCCLHA	6 Minutes	60 Minutes	6 Minutes	32 Minutes	6 Minutes	20 Minutes

* All defrost times are in the standard mode (as shipped)

† Time between defrost when within specified temperature range

METHOD TO SIZE ERVs and HRVs

Ventilator Sizing

Tables 1 and 2 should be used to determine the required airflow for a home. These guidelines are taken from ASHRAE 62.2-2007.

Table 1 – Ventilation Air Requirements, cfm

FLOOR AREA (ft^2)	BEDROOMS				
	0–1	2–3	4–5	6–7	>7
<1500	30	45	60	75	90
1501–3000	45	60	75	90	105
3001–4500	60	75	90	105	120
4501–6000	75	90	105	120	135
6001–7500	90	105	120	135	150
>7500	105	120	135	150	165

Table 2 – Ventilation Air Requirements, L/s

FLOOR AREA (m^2)	BEDROOMS				
	0–1	2–3	4–5	6–7	>7
<139	14	21	28	35	42
139.1–279	21	28	35	42	50
279.1–418	28	35	42	50	57
418.1–557	35	42	50	57	64
557.1–697	42	50	57	64	71
>697	50	57	64	71	78

HEATING AND COOLING LOAD CHARTS

Although the ventilators process the outside air before it enters the home, additional heating and cooling loads need to be considered.

HEATING LOAD BTUH

Outside Temp °F	Heating Load (Btuh) @ Inside Design Temp 72°F			
	ERV1150	ERV1200	HRV1150	HRV1250
–25	5186	8143	6636	10603
–20	4919	7723	6294	10057
–15	5075	7967	5952	9510
–10	4783	7509	5610	8964
–5	4491	7051	5268	8417
0	4200	6594	4925	7871
5	4234	6647	4583	7324
10	3918	6151	4241	6777
15	3958	6214	3899	6231
20	3611	5669	3557	5684
25	3264	5124	3215	5138
30	2916	4579	2873	4591
35	2569	4034	2531	4045
40	2222	3489	2189	3498

The heating load chart shows the heating loads in Btuh for a range of winter design temperatures for each model of ventilator.

EXAMPLE: The heating design temperature for Little Rock, AR is 20°F. The additional heating load of the ERVCCLHA1200 at 20°F is 559 Btuh. This additional load should be taken into consideration when sizing the heating equipment.

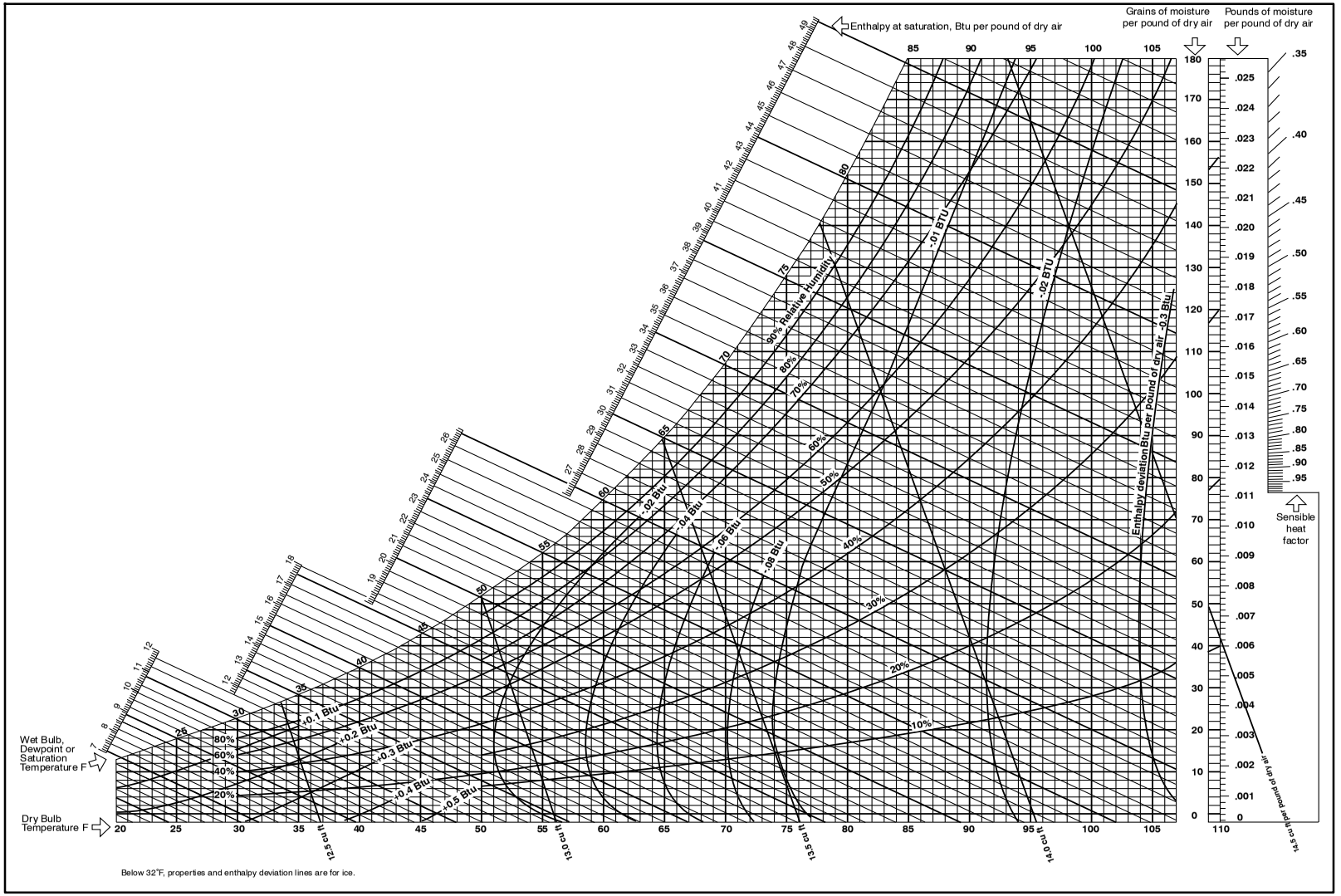
COOLING LOAD BTUH

Outside Enthalpy Btu/lb	Cooling Load (Btuh) @ Inside Design Temp 72°F and 50% Relative Humidity			
	ERV1150	ERV1200	HRV1150	HRV1250
30	380	640	670	1071
31	618	1040	1090	1741
32	855	1441	1509	2411
33	1093	1841	1928	3080
34	1331	2241	2347	3750
35	1568	2641	2766	4419
36	1806	3041	3185	5089
37	2043	3441	3604	5759
38	2281	3842	4023	6428
39	2519	4242	4442	7098
40	2756	4642	4861	7767
41	2994	5042	5280	8437
42	3231	5442	5699	9107

The cooling load chart shows loads in Btuh as well. To use the cooling load chart, first find the design enthalpy from a psychrometric chart using the design dry bulb and wet bulb temperatures. The cooling load can then be found for a range of enthalpies for each ventilator.

EXAMPLE: The design dry bulb temperature for Miami is 90°F and the average wet bulb at that temperature is 77°F. Using the psychrometric chart, the enthalpy is about 40.5 Btu per pound (Btu/lb) of dry air, which would round up to 41 Btu/lb dry air. In the left column, at 41 Btu/lb dry air, the ERVCCLHA1200 has an additional cooling load of 5042 Btuh, while the HRV1150CFM unit has an additional cooling load of 8437 Btuh.

PSYCHOMETRIC CHART


Enthalpy at saturation, Btu per pound of dry air
Grains of moisture per pound of dry air
Pounds of moisture per pound of dry air
Wet Bulb, Dewpoint or Saturation Temperature F
Dry Bulb Temperature F
Relative Humidity
Enthalpy deviation Btu per pound of dry air
Sensible heat factor
Below 32°F, properties and enthalpy deviation lines are for ice.

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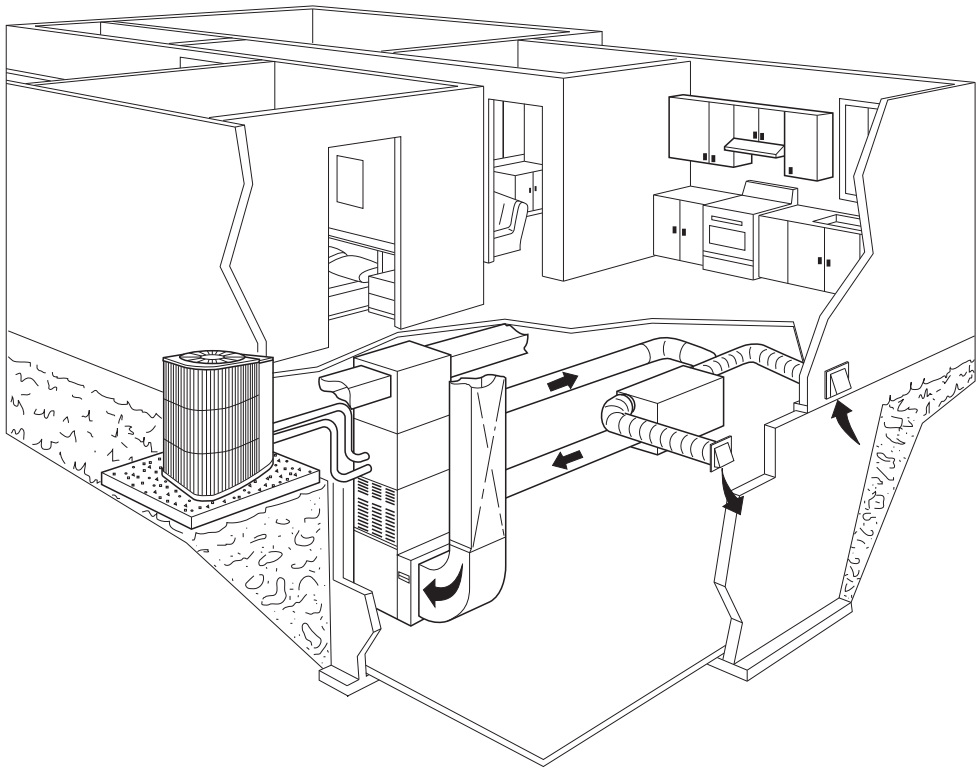
Ventilator installed with forced air system



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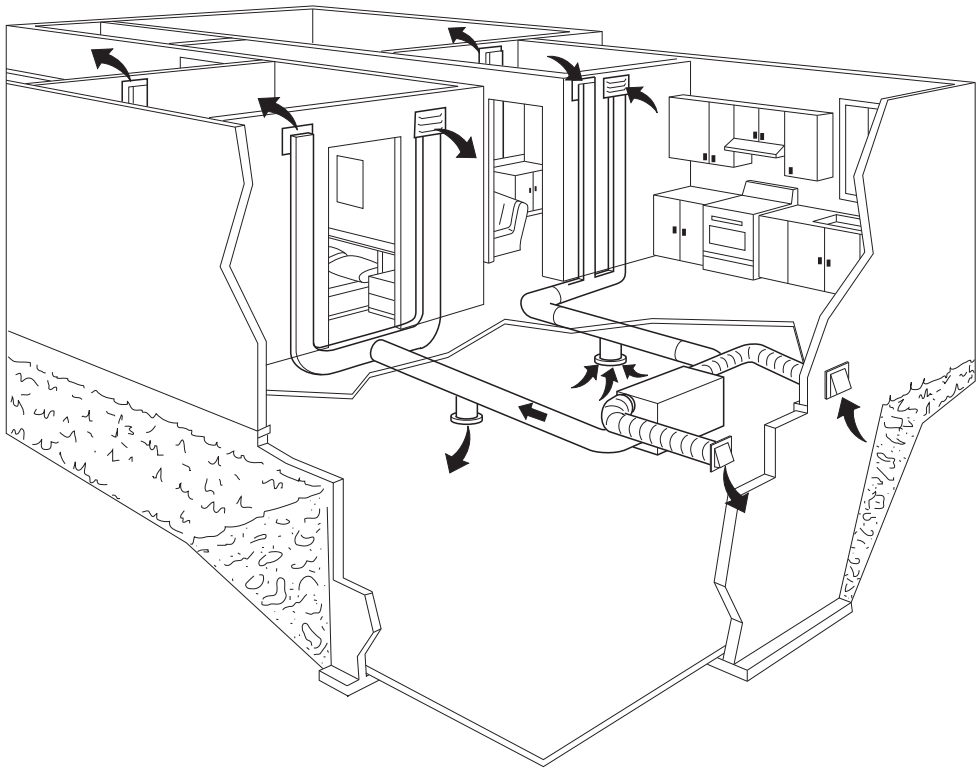
Ventilator installed with independent air distribution



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ACCESSORIES

VENTILATOR ACCESSORY NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
K	V	B	C	N	0	1	0	1	C	B	S

Product

KV – Ventilator Accessory Kit

Series
A – Original Series
B – Second Series

Type
AC01 – Accessory
CN01 – Control
TM01 – Timer
AC01 – Accessory

Package Quantity
01 – Single Pack

Control Description
CAU – Carrier Automatic Control
CBS – Carrier Basic Control
CLC – Carrier Latent Control
CLT – Carrier OneTouch Control
CST – Carrier Standard Control

Accessory Description
HOD – Intake Hood
KIT – Airflow Measuring Kit
6FM – Flow Collar 6–in.
7FM – Flow Collar 7–in.
8FM – Flow Collar 8–in.

Timer Description
120C – 20 Minute Timer Kit
160M – 60 Minute Timer Kit

KIT NUMBER	DESCRIPTION	WHERE USED
KVBCN0101CAU	Automatic Wall Control	Used with HRVs
KVBCN0101CBS	Basic Wall Control	Used with HRVs
KVBCN0101CLC	Latent Wall Control	Used with ERVs
KVBCN0101CLT	Carrier OneTouch Control	Used with ERVs and HRVs as a main wall control
KVBCN0101CST	Standard HRV Control	Used with HRVs
KVAAC0101HOD	Exterior Intake and Exhaust Hood	Used with ERVs and HRVs, 2 Required
KVBAC0101KIT	Airflow Measuring Kit	Start up Balancing Kit, includes (2) 6 in. Flow Meter Collars & Magnehelic Gauge
KVATM010120C	20 Minute Push Button Timer	Used with ERVs and HRVs when 20 minute manual operation is required
KVATM010160M	60 Minute Timer	Used with ERVs and HRVs, time is adjustable between 10 and 60 minutes
KVAAC01016FM	6 in. Flow Meter Collar	Used with ERVs and HRVs, at start up, when 6 in. duct work is connected to HRV
KVAAC01017FM	7 in. Flow Meter Collar	Used with ERVs and HRVs, at start up, when 7 in. duct work is connected to HRV
KVAAC01018FM	8 in. Flow Meter Collar	Used with ERVs and HRVs, at start up, when 8 in. duct work is connected to HRV
KVAFK0201150	Internal Filter	Used with HRVCCLHA1150, HRVCCLHA1250 Unit 15 1/2 in. x 7 in. x 5/8 in.

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